

THE WEATHER OF THE MONTH.

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

GENERAL CONDITIONS.

A. J. HENRY, Meteorologist.

The distribution of mean pressure in the Northern Hemisphere for April indicates the beginning of the dissolution of the great continental highs and the building of highs over oceanic areas. The Iceland LOW of the North Atlantic and the Aleutian LOW of the North Pacific, respectively, are still in evidence, although the former now extends southwestward almost to the Canadian Maritime Provinces, so far, indeed, that the winds of northeastern United States come within its control. The winds of the Atlantic north of about latitude 35° are also controlled by the Iceland LOW. Elsewhere over the North American Continent the winds are variable.

April, 1919, was a month without decided variations from the normal in any part of the area under consideration. Such variations as did occur were as a rule in the opposite sense with the result that the month considered, as a whole, was devoid of conspicuous departures.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

April was a quiet month on the North Pacific Ocean, devoid of any unusual meteorological features. Occasional gales have been reported, but with only one or two exceptions these were of moderate force. The Dutch steamship *Nias* encountered stormy weather about the 21st in latitude 40° N., longitude $160-165^{\circ}$ E. The wind attained a force of 10 from the northwest. Considerable fog was experienced south of the Aleutians during the second decade.

NORTH AMERICA.

By A. J. HENRY.

The month was less stormy than usual, and the variations in temperature and precipitation were for the most part such as might be expected during a transition month. Rainfall in the United States east of the Rocky Mountains was fairly abundant, and there were no destructive periods of low temperature, although low temperature with killing frost occurred during the third decade of the month in northeastern districts.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The atmospheric conditions for April, 1919, did not differ materially from those of the previous month, with the average pressure over practically the entire ocean apparently slightly above the normal, although not enough vessel reports were received in time to determine these facts accurately.

The number of days on which gales were reported were, as a rule, also less than usual, as only in two 5-degree squares were they recorded on more than two days.

From the 1st to the 3d there was a slight disturbance off the American coast, while the Azores HIGH was fairly well developed, and light to moderate winds were the rule over practically the entire ocean. On the 4th the LOW began to fill in, the HIGH remaining nearly stationary in intensity and position; the conditions of the wind and weather had changed but little, except that two vessels between the 35th and 45th parallels and the 40th and 45th meridians reported moderate gales accompanied by rain. From the 5th to the 8th the circulation of the air was comparatively sluggish, with light to moderate winds and fog off the banks of Newfoundland on the 7th and 8th. On the 9th there was a well developed LOW over the western part of the steamer lanes, and moderate gales were encountered over the ocean between the 35th and 45th parallels and the 35th and 48th meridians. This LOW moved eastward with a fair rate of speed, increasing in intensity, as on the 10th one vessel near latitude 48° , longitude 25° , encountered a southerly gale of over 50 miles an hour.

On the 11th and 12th the pressure was uniformly high over the entire ocean, with no heavy winds, except that on the former date one vessel a short distance north of the Azores experienced a moderate westerly gale. On the 13th there was a disturbance about 10° west of the Irish coast, and westerly to northerly winds of gale force prevailed over the southwesterly quadrants. On the 14th this area of low pressure surrounded the British Isles, the center being near Malin Head, Ireland, where the barometer reading was 28.70 inches. The storm area extended as far west as the 30th meridian, with strong westerly gales accompanied by "hail" in the southerly quadrants.

The observer on board the American steamship *Ampecto* stated in the storm log: "Gale began on the 14th. Lowest barometer, 29.33 inches at 3 a. m. on the 14th; latitude $49^{\circ} 57'$ N., longitude $13^{\circ} 57'$ W. End of gale on the 26th. Highest force of wind, 65 miles an hour. Shift of wind near time of lowest barometer, NW. to N."

This LOW drifted slowly eastward, and on the 15th was central near the east coast of England; moderate to strong northwesterly gales swept the British Isles, although they did not extend as far west as on the previous day.

On the 16th the center of this disturbance was evidently somewhere in central Europe, and a few reports were received showing that moderate westerly gales prevailed off the French coast. On the 17th a fairly well-developed LOW was central near latitude 43° , longitude 40° , and moderate southerly gales were reported in the region between the center and the 45th meridian.

From the 18th to the 24th, high pressure and light to moderate winds were the rule, while fog prevailed off the Banks of Newfoundland during the greater part of this period. On the 25th and 26th a disturbance was central in the Province of Quebec, and moderate westerly and northwesterly gales were reported on both dates between the 35th and 43d parallels, and the 60th meridian and the American coast. On the 27th and 28th heavy northerly winds were encountered off the European coast. The observer on board the British steamship *Northland* stated: "Gale began on the 27th. Lowest barometer, 29.85 inches, nearly all day on the 28th, when the vessel

was in the Irish Channel. End of gale, p. m. of 28th. Highest force of wind, 55 miles an hour. Shift of wind on 28th, W. to WNW. It was in this gale that three American mine sweepers and one naval tug were wrecked near the coast of France with considerable loss of life." (See account of snowstorm in British Isles, below.)

NOTES ON WEATHER IN OTHER PARTS OF THE WORLD.

BRITISH ISLES.

April was the fourth month in succession with the mean temperature over the country generally appreciably below normal. The distribution of rainfall was irregular. The general rainfall expressed as a percentage of the normal was: England and Wales, 124; Scotland, 138; Ireland, 72.—*Symons's Meteorological Magazine*, May, 1919, p. 45.

A snowstorm of unusual severity for so late in the season occurred generally over the British Isles on Sunday, April 27, and in the southeast of England the storm was particularly severe. On the morning of Sunday a subsidiary disturbance was developing over the northern portion of the kingdom, and it afterwards moved southward and eastward, over England, the parent disturbance being centered over Denmark. By the evening the subsidiary had assumed more serious proportions than the primary to the northeastward, and was now centered over London and the southeast of England. Snow or

On the 29th the Dutch steamship *Maasdijk* reported a southeasterly gale of over 50 miles an hour near latitude 37°, longitude 48°, although a number of other vessels not far from that locality encountered winds of only moderate force.

hail fell in all districts of the United Kingdom. A region of high barometer extended from Iceland to the Azores which caused strong northerly winds in the rear of the disturbance, and gale force was reached in all districts, while at Holyhead the wind force attained the velocity of 70 miles per hour during Sunday night. In London snow commenced at about 1 p. m. after somewhat heavy rain, and it thoroughly covered the ground by 3 p. m. The depth of snow by the early morning of April 28 in the north of London was 12 to 15 inches and the total precipitation in the 24 hours was 1.6 inches at Camden Square and 1.7 inches at Hampstead. The snowfall occasioned much dislocation of the telegraph and telephone services, and the rapid melting of the snow caused floods in many parts. Temperature on April 27 was abnormally low for so late in the season, the thermometer in London during the afternoon standing at about freezing point. Agriculturists and fruit-growers have suffered somewhat badly.—*Nature (London)*, May 1, 1919, p. 171.

DETAILS OF THE WEATHER IN THE UNITED STATES, APRIL, 1919.

CYCLONES AND ANTICYCLONES.

By A. J. HENRY, Meteorologist.

Cyclones.—Six principal, and the same number of secondary, cyclones have been plotted on Chart III. None of these was severe in character and the movement was in no wise exceptional. A majority of the secondaries developed over the southern plateau and Rocky Mountain region and their movement to the north-

eastward over the great interior valleys was attended by abundant precipitation.

Anticyclones.—Nine anticyclones, the majority of which first appeared over Saskatchewan, have been plotted on Chart II. The general direction of movement was toward the southeast.

THE WEATHER ELEMENTS.

P. C. DAY, Climatologist and Chief of Division.

[Dated: Weather Bureau, Washington, June 2, 1919.]

PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds for April, 1919, are graphically shown on Chart VII, while the means at the several stations, with the departures from the normal, are shown in Tables I and III.

Pressure was decidedly low over the central valleys during the latter part of the first decade, and moderately low about the middle of the second decade over most central and eastern districts where rains were widespread and heavy. During the early part of the third decade pressure was unusually high over the Dakotas and thence southeastward to the lake region, but otherwise the variations were small, this being particularly true in the district west of the Rocky Mountains.

The average pressure for the month was above normal in practically all portions of the United States, except in the far Southwest, where it was slightly below. In Canada, the region of the Great Lakes and portions of the far western Provinces had monthly averages slightly

below normal; however, in no case was the departure from the seasonal average greater than 0.10 inch.

The distribution of atmospheric pressure favored southerly winds in most sections from the Rock Mountains eastward, except near the Canadian border, where they were frequently from the North. West of the Rocky Mountains the winds were variable but frequently between Northwest and Southwest points.

TEMPERATURE.

April opened with unseasonably cold weather from the Mississippi Valley eastward, the line of freezing temperature extending as far south as the northern portion of the east Gulf States; and light frosts occurred in the interior of Florida. In the far West the weather was moderately warm for the season. Slowly rising temperature followed in the East, so that by the middle of the first decade moderately warm weather prevailed in nearly all districts. During the latter part of the decade decidedly lower temperature overspread the Central Plains States, but, otherwise, moderately warm weather continued.